PAPERS

IN

CHEMISTRY.

CHEMISTRY.

The SILVER MEDAL and TWENTY GUINEAS were this Session voted to Mr. THOMAS VANHERMAN, at No. 21, Mary-le-bone-street, Golden-square, for his Processes of Cheap and Durable PAINTS with FISH-OIL.

The following ACCOUNTS and CERTIFICATE were received from him.

GENTLEMEN,

HAVING applied a great portion of my time, for several years past, to discover a method of preparing a cheap and durable composition for the defence and preservation of all work exposed to the inclemency of the weather, I have now the satisfaction of laying before the Society for the Encouragement

of Arts, &c. specimens of some of the above colours ready prepared for use, which will, I flatter myself, be found superior to all others, for cheapness and durability, equal to any in beauty, and not subject to blister or peel off by the sun.

The vehicle made use of for the said paints is fish-oil, the preparation of which is so simple, that when known, gentlemen who have large concerns to paint, may have this composition of any colour manufactured, and laid on by their labourers. I have sent a bottle of the prepared oil; also, a number of patterns, of various colours. The highest price of any, does not exceed three-pence per pound, and many of them so low as two-pence, in a state fit for use. I have likewise sent a pot of white-lead which has been ground with prepared fish-oil, and which, when thinned with linseed-oil, surpasses any white hitherto made use of for resisting all weathers, and retaining

taining its whiteness. I hope my humble endeavours will merit the approbation of the Society, before whom, I will, at any time they shall please to appoint, make the various experiments they may require.

Relying on your encouragement, I am, Gentlemen, with due respect,

Your most obedient humble servant,

THOMAS VANHERMAN.

No. 2, Bedford Place, Rotherhithe,
December 11th, 1804.

To the SOCIETY of ARTS, &c.

To refine one ton of Cod, Whale, or Seal Oil, for painting, with the cost attending it.

	£.	s.	d.
One ton of fish-oil, or 252 gallons, ...	36	0	0
32 gallons of vinegar, at 2s. per gallon, ...	3	4	0
12lbs. litharge, at 5d. per lb.	0	5	0
12lbs. white copperas, at 6d. ditto, ...	0	6	0
12 gallons of linseed-oil, at 4s. 6d. per gallon,	2	14	0
2 gallons of spirit of turpentine, at 8s. ditto,	0	16	0
	£43	5	0

252 gallons

252 gallons of fish-oil,
12 ditto linseed-oil,
2 ditto spirits of turpentine,
32 ditto vinegar

298 gallons, worth 4s. 6d. per gallon.

Which produces ..	£67	1	0
Deduct the expense ..	43	5	0
	£23	16	0 profit.

To prepare the Vinegar for the Oil.

Into a cask which will contain about forty gallons, put thirty-two gallons of good common vinegar; add to this twelve pounds of litharge, and twelve pounds of white copperas in powder; bung up the vessel, and shake and roll it well twice a day for a week; when it will be fit to put into a ton of whale, cod, or seal oil; (but the Southern whale oil is to be preferred, on account of its good colour, and little or no smell) shake and mix all together, when it may settle until the next day; then pour off the clear, which will be about seven-eighths

eighths of the whole. To this clear part add twelve gallons of linseed-oil, and two gallons of spirits of turpentine; shake them well together, and after the whole has settled two or three days, it will be fit to grind white lead, and all fine colours in; and, when ground, cannot be distinguished from those ground in linseed-oil, unless by the superiority of its colour.

If the oil is wanted only for coarse purposes, the linseed-oil and oil of turpentine may be added at the same time that the prepared vinegar is put in, and, after being well shaken up, is fit for immediate use without being suffered to settle.

The vinegar is to dissolve the litharge, and the copperas accelerates the dissolution, and strengthens the drying quality.

The residue, or bottom, when settled, by the addition of half its quantity of fresh lime-water, forms an excellent

oil for mixing with all the coarse paints for preserving outside work.

Note. All colours ground in the above oil, and used for inside work, must be thinned with linseed-oil and oil of turpentine.

☞ The oil mixed with lime-water, I call *incorporated oil.*

The method of preparing and the expense of the various Impenetrable Paints.

FIRST.—*Subdued Green.*

	£.	s.	d.
Fresh lime-water, 6 gallons	0	0	3
Road dirt finely sifted, 112 pounds, ...	0	1	0
Whiting, 112 ditto, ...	0	2	4
Blue-black, 30 ditto, ...	0	2	6
Wet blue, 20 ditto, ...	0	10	0
Residue of the oil, 3 gallons, ...	0	6	0
Yellow ochre in powder, 24 pounds, ...	0	2	0
	£1	4	1

This composition will weigh 368 pounds, which is scarce one penny per pound. To render the above paint fit for

for use, to every eight pounds add one quart of the incorporated oil, and one quart of linseed-oil, and it will be found a paint with every requisite quality, both of beauty, durability, and cheapness, and in this state of preparation does not exceed two-pence-halfpenny per pound; whereas the coal tar of the same colour is six-pence.

The method of mixing the ingredients for the Subdued Green.

First, pour six gallons of lime-water into a large tub, then throw in 112 pounds of whiting; stir it round well with a stirrer, let it settle for about an hour, and stir it again. Now you may put in the 112 pounds of road dirt, mix it well, then add the blue-black, after which the yellow-ochre, and when all is tolerably blended, take it out of the tub and put it on a large board or platform, and with a labourer's shovel mix,

and work it about as they do mortar. Now add the wet blue, which must be previously ground in the incorporated oil (as it will not grind or mix with any other oil). When this is added to the mass, you may begin to thin it with the incorporated oil in the proportion of one quart to every eight pounds, and then the linseed-oil in the same proportion, and it is ready to be put into casks for use.

Lead Colour.

	£.	s.	d.
Whiting, 112 pounds,	0	2	4
Blue-black, 5 ditto,	0	1	8
Lead ground in oil, 28 ditto,	0	14	0
Road dirt, 56 ditto,	0	0	6
Lime-water, 5 gallons,	0	0	6
Residue of the oil, 2½ ditto,	0	5	0
	£1	4	0

Weighs 256 pounds.

To the above add two gallons of the incorporated oil, and two gallons of linseed-oil to thin it for use, and it will not exceed 1¾*d.* per pound.

Note.—

Note.—The lime-water, whiting, road dirt, and blue-black, must be first mixed together, then add the ground lead, first blending it with two gallons and a half of the prepared fish-oil, after which thin the whole with the two gallons of linseed-oil, and two gallons of incorporated oil, and it will be fit for use. For garden doors, and other work liable to be in constant use, a little spirits of turpentine may be added to the paint whilst laying on, which will have the desired effect.

Bright Green.

		£.	s.	d.
112	pounds yellow ochre in powder, at 2d. per lb.	0	18	8
168	ditto road dust,	0	1	8
112	ditto wet blue, at 6d. per lb.	2	16	0
10	ditto blue-black, at 3d. ditto,	0	2	6
6	gallons of lime water,	0	0	6
4	ditto fish-oil prepared,	0	12	0
7½	ditto incorporated oil,	0	15	0
7½	ditto linseed-oil, at 4s. 6d. per gallon,	2	8	9
592lbs.	weight.	£7	15	1

This excellent bright green does not exceed three-pence farthing per pound ready to lay on, and the inventor challenges any colour-man or painter, to produce a green equal to it for eighteen-pence.

After painting, the colour left in the pot may be covered with water to prevent it from skinning, and the brushes, as usual, should be cleaned with the painting knife, and kept under water.

A brighter green may be formed by omitting the blue-black; and

A lighter green may be made by the addition of ten pounds of ground white-lead.

A variety of greens may be obtained, by varying the proportions of the blue and yellow.

Observe that the wet blue must be ground with the incorporated oil, preparatory to its being mixed with the mass.

Stone Colour.

	£.	s.	d.
Lime-water, 4 gallons,	0	0	4
Whiting, 112 pounds,	0	2	4
White lead ground, 28 pounds, at 6d. per lb.	0	14	0
Road dust, 56 pounds,	0	0	6
Prepared fish-oil, 2 gallons,	0	6	0
Incorporated oil, 3½ gallons,	0	7	0
Linseed-oil, 3½ ditto,	0	15	9
Weighs 293lbs.	£2	5	11

The above stone colour, fit for use, is not two-pence per pound.

Brown Red.

	£.	s.	d.
Lime-water, 8 gallons,	0	0	8
Spanish brown, 112lbs.	1	0	0
Road dust, 224lbs.	0	2	0
4 gallons of fish-oil,	0	12	0
4 ditto incorporated oil,	0	8	0
4 ditto linseed-oil,	0	18	0
Weighs 501lbs.	£2	0	8

This most excellent paint is scarcely one penny per pound.

The Spanish brown must be in powder.

A good chocolate colour is made by the addition of blue-black in powder or lamp-black, till the colour is to your mind, and a lighter brown may be formed by adding ground white-lead.

Note.—By ground lead, is meant white-lead ground in oil.

Yellow is prepared with yellow ochre in powder, in the same proportion as the Spanish brown.

Black is also prepared in the same proportion, using lamp-black or blue-black.

To whiten Linseed-Oil.

Take any quantity of linseed-oil, and to every gallon add two ounces of litharge; shake it up every day for fourteen days, then let it settle a day or two; pour off the clear into shallow pans, the same as dripping-pans, first putting half a pint of spirits of turpentine

tine to each gallon. Place it in the sun, and in three days it will be as white as nut-oil.

This oil, before it is bleached, and without the turpentine, is far superior to the best boiled oil, there being no waste or offensive smell.

THOMAS VANHERMAN.

From experiments made, it appears that fine sand will not answer the purposes of road dirt in painting, and that this dry dirt or dust collected in highways much travelled by horses and carriages, and afterwards finely sifted, is the article recommended, as possessing the properties required.

SIR,

ENCLOSED you will find a letter from Mr. Hill, West Lavant, Sussex, builder, and surveyor to his Grace the Duke of Richmond, with his opinion respecting the painting of his Grace's house and premises, at Earl's Court, Little Chelsea; which was finished December,

December, 1803, which I request you will present to the Society's Committee for their inspection.

I am, Sir,

Your respectful humble servant,

THOMAS VANHERMAN.

No. 2, Bedford-Place, Rotherhithe,
February 11th, 1805.

CHARLES TAYLOR, Esq.

SIR,

I HAVE just received your letter dated the 5th instant, and am happy to find that your oil and colour business so well stands the test of others, as well as that of myself. The fish-oil composition you made use of, in all the painting you have done at Earl's Court, Kensington, for his Grace the Duke of Richmond, under my superintendance, in 1802-3, was fully equal, if not superior to any painting done in the usual way with linseed-oil, white-lead, &c.

&c. I have also the highest opinion of your coarse composition and fish-oil you made use of on the out-buildings, fences, &c. on the above premises; the great body and hard surface it holds out, must be of the greatest preservation to all timbers and fences, exposed to open air, and all weathers. It must also be of the greatest service on plastere stucco, external walls, &c.

If any farther attestation from me, relative to the business you did at the above premises, can be of any service to you, you will command,

Sir, your obedient servant,

W. HILL.

West Lavant, near Chichester, Sussex, February 7th, 1805.

Mr. THOMAS VANHERMAN.

SIR,

YOUR favour announcing to me the reward voted by the Society of Arts, &c. gave me inexpressible satisfaction,

faction, and I trust my future efforts to merit their approbation will be found worthy their further notice.

I am, Sir, with the greatest respect,

Your humble servant,

THOMAS VANHERMAN.

P. S. I beg leave here to subjoin a receipt for a constant white for the inside painting of houses; which paint, though not divested of smell in the operation, will become dry in four hours, and all smell gone in that time.

White Paint.

To one gallon of spirits of turpentine, add two pounds of frankincense, let it simmer over a clear fire until dissolved; strain it and bottle it for use. To one gallon of my bleached linseed-oil, add one quart of the above, shake them well together and bottle it also. Let any quantity of white-lead be ground with spirits of turpentine very fine, then add a suf-

a sufficient portion of the last mixture to it, until you find it fit for laying on. If in working it grows thick, it must be thinned with spirits of turpentine.—It is a flat or dead white.

No. 21, Mary-le-bone Street, Golden-Square,
April 9th, 1805.

CHARLES TAYLOR, Esq.

TWENTY GUINEAS were this Session adjudged to Mrs. JANE RICHARDSON, of No. 3, Willis's-Place, Chelsea, for clearing FEATHERS from their animal OIL, being Class 90, of the Premiums offered by the Society.

The following ACCOUNTS were received from her.

SIR,

I HAVE sent forty pounds weight of feathers, cleared from their animal oil, in claim of the premium offered by the Society, and am, Sir,

Your obedient servant,

JANE RICHARDSON.

No. 1, *York-place, Lambeth.*
Jan. 16, 1805.

CHARLES TAYLOR, Esq.

DE-

DESCRIPTION *of the process for clearing* FEATHERS *from their animal* OIL.

Take for every gallon of clean water, one pound of quick-lime; mix them well together, and when the undissolved lime is precipitated in fine powder, pour off the clear lime-water for use, at the time it is wanted.

Put the feathers to be cleaned in another tub, and add to them a quantity of the clear lime-water, sufficient to cover the feathers about three inches, when well immersed and stirred about therein.

The feathers, when thoroughly moistened, will sink down and should remain in the lime-water three or four days, after which the foul liquor should be separated from the feathers by laying them on a sieve.

The feathers should be afterwards well washed in clean water and dried upon nets;

nets; the meshes about the fineness of cabbage-nets.

The feathers must from time to time be shaken upon the nets, and as they dry will fall through the meshes, and are to be collected for use.

The admission of air will be serviceable in the drying; the whole process will be completed in about three weeks; after being prepared as above mentioned, they will only require beating for use.

Mr. Jolly, poulterer, of Charing-cross, attended a committee appointed to inspect the feathers, and stated that Mrs. Richardson had bought from him forty pounds weight of feathers, in the state they were plucked from dead geese, and in such a condition that if they had been kept in the bag only four days, without being cleansed, they would have been very offensive; that the

the feathers exhibited by Mrs. Richardson appear to be the same he had sold her, but that they were now in a much cleaner state, and seem perfectly cleared from their animal oil.

The Committee, in order to authenticate more fully the merits of Mrs. Richardson's process, requested Mr. Grant, a considerable dealer in feathers, to furnish some specimens of feathers of different kinds in an unclean state, to be cleansed by Mrs. Richardson; in consequence whereof an application was made to Mr. Grant, and the following letter received from him.

SIR,

I TAKE the liberty of sending herewith three samples of feathers, on which the experiments may be tried; but should the quantity not be sufficient,

on being favoured with your commands, shall with pleasure send any quantity necessary.

The bag No. 1, contains the commonest feathers we ever make use of; it is a Russian produce of various wild-fowl; No. 2, grey Dantzick goose; No. 3, a superior kind of Dantzick goose.

The two first are in their raw state, just taken out of the bags in which they were imported; the last have been stoved the usual time (three days), but retain their unpleasant smell. Should it not be considered giving you too much trouble, shall be extremely obliged by your favouring me with a line when the experiment has been made, and I shall be happy in waiting upon you to know the result.

I am respectfully, Sir,
Your obedient humble servant,
THOMAS GRANT.

No. 226, Piccadilly.

CHARLES TAYLOR, Esq.

After

After the feathers last mentioned were sent back by Mrs. Richardson, Mr. Grant attended to examine them, and declared that they appeared to be perfectly well cleaned.

Certificates from Mr. Christopher Bushnan, No. 10, Beaufort-row, Chelsea, and from Mr. W. Baily, testified to the efficacy of Mrs. Richardson's process.

FIFTEEN GUINEAS were this Session voted to Mrs ANNE MORRIS, No. 41, Union-street, near the Middlesex Hospital, for a method of cleansing SILK, WOOLLEN, and COTTON Goods, without damage to the Texture or Colour.

The following ACCOUNTS were received by the Society.

SIR,

I BEG the Society's inspection of a method I have invented for cleaning silk, cotton, and woollen goods, which I think will be found very efficacious, and am with respect, Sir,

Your humble servant,
ANNE MORRIS.

Union-street, Jan. 23, 1805.

CHARLES TAYLOR, Esq.

Description

Description of Mrs. Morris's Method.

Take raw potatoes, in the state they are taken out of the earth, wash them well, then rub them on a grater over a vessel of clean water to a fine pulp, pass the liquid matter through a coarse sieve into another tub of clear water; let the mixture stand till the fine white particles of the potatoes are precipitated, then pour the mucilaginous liquor from the fecula, and preserve this liquor for use. The article to be cleaned should then be laid upon a linen cloth on a table, and having provided a clean sponge, dip the sponge in the potato-liquor, and apply the sponge thus wet upon the article to be cleaned, and rub it well upon it with repeated portions of the potato-liquor, till the dirt is perfectly separated; then wash the article in clean water several times,

to remove the loose dirt; it may afterwards be smoothed or dried.

Two middle-sized potatoes will be sufficient for a pint of water.

The white fecula which separates in making the mucilaginous liquor, will answer the purpose of tapioca, will make an useful nourishing food with soup or milk, or serve to make starch and hair-powder.

The coarse pulp which does not pass the sieve, is of great use in cleaning worsted curtains, tapestry, carpets, or other coarse goods.

The mucilaginous liquor of the potatoes will clean all sorts of silk, cotton, or woollen goods, without hurting the texture of the article, or spoiling the colour.

It is also useful in cleansing oil-paintings, or furniture that is soiled.

Dirty painted wainscots may be cleaned by wetting a sponge in the liquor, then dipping it in a little fine clean

clean sand, and afterwards rubbing the wainscot therewith.

Feb. 4th, 1805. ANNE MORRIS.

Various experiments were made by Mrs. Morris, in the presence of a committee, at the Society's house: the whole process was performed before them upon fine and coarse goods of different fabricks, and to their satisfaction.